

SONNENERDE PYRODRY



Project Partner: Sonnenerde GmbH	Project Country: Austria	Project Region: Riedlingsdorf, Burgenland
Project Type: Biochar	Certification Standard: Carbon Standards International (CSI)	CO₂ Impact in Tons per Year: 1,350 tCO ₂

Project Description:

Sonnenerde has pioneered the European biochar market since 2012, converting organic waste into biochar, a climate-positive material created by heating organic residues in low-oxygen conditions. This process permanently locks CO₂ into a stable carbon form, creating a long-term carbon sink. Based in Riedlingsdorf, Austria, Sonnenerde uses screening residues from its own composting facility as feedstock. Without this intervention, these residues would decompose or be incinerated, releasing greenhouse gases. Instead, the project sequesters carbon while strengthening the regional circular economy. To ensure integrity, Sonnenerde employs a digital Monitoring, Reporting, and Verification (dMRV) system that tracks biochar properties and process emissions.

Together with its subsidiary CharLine, Sonnenerde transforms biochar into ready-to-use products, from soil enhancers for agriculture to specialized substrates for urban tree planting. By embedding biochar into these long-lived applications, the company generates certified carbon sinks with storage potential of up to 1,000 years.

Key Outcomes:

- Guarantees long-term carbon sequestration in soils for up to 1,000 years.
- Strengthens agricultural resilience to climate change by improving soil fertility, water retention, and nutrient storage.
- Closes regional material loops by transforming composting residues and waste wood into valuable biochar products rather than allowing biomass to decompose or be incinerated.
- Advances circular, low-carbon infrastructure by providing biochar substrates that support healthier rural soils and urban tree growth.



Sonnenerde team



Biochar-based substrates



Biomass residues to biochar

Supported SDGs



Increases soil fertility and nutrient storage capacity to support sustainable agriculture.



Reduces the need for chemical soil treatments and provides healthy feed additives for livestock.



Improves groundwater protection by decreasing nutrient outflow through enhanced soil amendment.



Utilizes a photovoltaic system and recovers waste heat to power its production processes.



Supports urban climate adaptation through specialized biochar substrates for healthy city trees.



Transforms biogenic waste into high-quality products within a circular bioeconomy.



Provides a recognized technology for long-term carbon storage and greenhouse gas reduction.



Reduces harmful nutrient run-off into water bodies by improving soil retention.



Promotes the formation of humus and provides a vital habitat for soil microbiology.